

**RESEARCH ARTICLE :**

Assessing the knowledge level of tribals farmers on recommended indigenous agricultural practices in millets

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SUMMARY : The present paper is the outcome of an attempt to made a document of indigenous practices, which are used by tribal people of Kalrayan hills in Villupuram district of Tamil Nadu. This paper gives an account of millets crops viz., Varagu, Cumbu, Samai, Thinai. Their traditional belief, concept, knowledge is the cause of sustainable agricultural development. This paper deals with the account of indigenous agricultural practices with their knowledge level of the tribal farmers in Kalrayan hills. A sample size of 300 respondents is selected by the proportionate random sampling method. The practices were selected by the pre testing interview schedule and the data was analyzed by appropriate statistical tools. This paper argues that the need to identify the indigenous knowledge which has scientific rationality, so that it can be incorporated into agricultural especially in millets. It also deals with the constraints of suggesting the knowledge in the study area and the strategy for using indigenous knowledge in millets to get food security, livelihood and ecological balance on a sustainable development in the tribal sectors. The result examined that most of the tribal farmers had high knowledge in indigenous agricultural practices on millets in Kalrayan Hills.

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BACKGROUND AND OBJECTIVES

In the tribal areas the development of Agriculture plays a vital role in improving the economy of the tribal. Moreover, the climatic conditions and the soil in the hilly areas are very much suitable to the Mediterranean climate type to develop the agricultural crop production, especially in millets. Therefore, tribal farmers, mostly concentrated over the agriculture productivity to improve their

economy and raising their status through the development of agricultural practices with local knowledge is unique to a given culture or society for decision making in agricultural crop management at the local level. The proper agricultural knowledge of existing indigenous knowledge and subsequent field evaluation is the paramount to make valuable local wisdom in improving the research emanated technology, further this paper gives an account of indigenous agricultural practices

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knowledge in millets with the local varieties of crops like Varagu, Cumbu, Samai, Thenai. They have the peculiar knowledge practices for maintaining the package of indigenous practices in millets. Keeping this in view, the present study was formulated to aggregate, categorize and examine the indigenous practices of millets crop in Kalrayan hills of Villupuram district. The 300 respondents were selected by proportionate random sampling method and a starchy interview schedule was administered to assess their knowledge level of indigenous agricultural practices in millets. The selected practices are explained to the tribals respondents and value the scores with appropriate statistical tools. More traditional knowledge in nature having faith in the practices of the local communities. They managed a traditional life style through their indigenous knowledge system.

The on-going practices of using such knowledge by ethnic communities established their belief where the traditional knowledge used for the fruitful of the people in nature. Hence, the study of indigenous agricultural practices of tribals in Kalrayan hills are helpful for proposing the action paradigm of the technologies for the benefit of the tribal farming community. Keeping this in view the study was carried out. The paper discusses about the indigenous practices in millets about the account of accumulated indigenous cultivation knowledge level was found in Kalrayan hills of Villupuram district. The result revealed that most of the indigenous agricultural practices in millets had high level of knowledge.

RESOURCES AND METHODS

The study was conducted in Kalrayan hills which was located at Villupuram district. Among 50 revenue villages in kalrayan Hills 12 Revenue villages were selected based on highest population of tribals farmers in the Kalrayan hills. Totally 300 tribals farmers were selected based on proportionate random sampling method. To study the knowledge level of the tribal farmers regarding indigenous agricultural practices in millets, a recommended indigenous practices consisting of 19 items on millets are selected by pre-tested interview schedule. The recommended indigenous practices items contained ‘‘know’’ and Don’t know’ responses and a score of ‘‘one’’ and zero’’ was given, respectively, for quantification of the result. The score summated overall the correct answers formed the total score of the individual. Based on the total possible score of the

indigenous agricultural practices in millets are analysed with appropriate statistical method and measured with well structured interview schedule.

OBSERVATIONS AND ANALYSIS

The extent of knowledge level of recommended indigenous agricultural practices in millets are given in Table 1.

It is quite interesting to note from the above table, that out of 19 indigenous practices under millets 18 practices are found to be high knowledge which was accounted by three fourth of the respondents. It could be inferred from the same table that all the indigenous practices under varagu and samai showed that high level of knowledge by three fourth of the respondents. Out of eight indigenous practices in cumbu, seven are found to be high level of knowledge by more than three fourth of the respondents in the practices *viz.*, drying of cumbu until a metallic sound is produced (98.67%), spreading of Nochi leaves over the storage container to control pest (98.33%), mixing of seed purpose cumbu with dried neem leaves (97.33%), Threshing done by walking over earheads for seed purpose (95.00%), spreading of cumbu ear heads circularly to a height of 1 foot and cattle threshed (94.00 %), storage in earthen pots covered and tied with cloth (94.00%) and drying of cumbu until easy separation of husk ensured (84.33%), followed by sun drying of cumbu on every new moon day (72.33%). Thus, the indigenous practices showed that had high level of knowledge of the respondents due to the reason of they always using cumbu for daily consumption of hygienic food which is followed from one generation to another generation. This finding is in accordance with the findings of Kumar *et al.* (2018).

The Table 1 also shows that all the respondents had high level of knowledge by more than nifty per cent of the respondents had reported that varagu practices *viz.*, sun drying of varagu in stone grinder (98.67%), grinding varagu in stone grinder (98.67%), use of stone mortar called ‘erakai’ (98.33%), spreading varagu to a height of 1 foot and cattle threshed (97.67%) and field drying until the colour turns from green to black (96.67%). This finding is in line with the findings of Lakkakula *et al.* (2011).

The practices in samai showed a high level of knowledge by more than nifty per cent of the respondents had reported that *viz.*, sand is added to samai and then

roasted in a container called 'vanali' (95.33%), parboiled samai is shade dried for one day (92.67%), roasted samai is crushed in a mortar with a pestle to remove the husk (91.67%) and water is added to samai and then parboiled in a big vessel easy separation of husk for easy separation (87.67%). This findings is conformation with the findings of Venkatesan *et al.* (2015).

The practices in Thenai showed a high level of knowledge by more than nifty per cent of the respondents had reported that *viz.*, preparation of thenai flour by grinding (95.33%) and mixing thenai with honey for food (85.33%). This finding is similar with the findings of Venkatesan and Sundaramari (2017).

Conclusion:

With regard to the extent of knowledge level of indigenous agricultural practices in millets among the tribal respondents of Kalrayan hills, examined that out of four

millets crops *viz.*, varagu (*Paspalum scrobiculatum*), cumbu (*Pennisetum typhoideum*), samai (*Panicum miliare*) and thenai (*Setaria italica*) showed that the high level of knowledge was found by three fourth of the respondents. Further the result examined and showed that out of 19 indigenous practices, 18 practices are found to be high knowledge level by three fourth of the tribal respondents due to their rich traditional knowledge, belief of their traditional fatalism and low cost practices with low consumption of time.

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Table 1 : Distribution of respondents to according to their practice wise indigenous knowledge level on millets (n =300)

| Sr. No. | Indigenous agricultural practices in millets | No. of Respondents | Per cent |
|---------------|--|--------------------|----------|
| Varagu | | | |
| 1. | Spreading varagu to a height of 1 foot and cattle threshed | 293 | 97.67 |
| 2. | Sun drying of varagu in stone grinder | 296 | 98.67 |
| 3. | Grinding varagu in stone grinder | 296 | 98.67 |
| 4. | Use of stone mortar called 'erakai' | 295 | 98.33 |
| 5. | Field drying until the colour turns from green to black | 290 | 96.67 |
| Cumbu | | | |
| 6. | Spreading of cumbu ear heads circularly to a height of 1 foot and cattle threshed | 282 | 94.00 |
| 7. | Threshing done by walking over earheads for seed purpose | 285 | 95.00 |
| 8. | Drying of cumbu until a metallic sound is produced | 296 | 98.67 |
| 9. | Drying of cumbu until easy separation of husk ensured. | 253 | 84.33 |
| 10. | Storage in earthen pots covered and tied with cloth. | 282 | 94.00 |
| 11. | Spreading of Nochi leaves over the storage container to control pest | 295 | 98.33 |
| 12. | Mixing of seed purpose cumbu with dried neem leaves. | 292 | 97.33 |
| 13. | Sun drying of cumbu on every new moon day to protect pest and diseases. | 217 | 72.33 |
| Samai | | | |
| 14. | Water is added to samai and then parboiled in a big vessel easy separation of husk for easy separation | 263 | 87.67 |
| 15. | Parboiled samai is shade dried for one day | 278 | 92.67 |
| 16. | Sand is added to samai and the roasted in a container called 'vanali' | 286 | 95.33 |
| 17. | Roasted samai is crushed in a mortar with a pestle to remove the husk | 275 | 91.67 |
| Thenai | | | |
| 18. | Preparation of thenai flour by grinding | 286 | 95.33 |
| 19. | Mixing thenai with honey for food | 256 | 85.33 |

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